

How to Clean Up Smoke and Soot from a Fire Health Fact Sheet

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ENVIRONMENTAL HEALTH



Smoke and soot can travel and enter rooms affecting paint, carpet, upholstery, drapes, clothing and any other belongings. The first step that should be taken when cleaning up after a fire is ventilating the fire scene and removing debris. Thorough cleaning and neutralizing of both the deposits and odors are required, including cleaning outdoor surfaces like playground equipment, prior to any restoration or reuse.

Note: If you have children, leave them with a relative or friend while you clean after the fire. The site may be unsafe for children, and seeing the damage may upset them and cause long-term effects, including nightmares.

How to Start – General Cleaning Techniques

The type of fire will determine the cleaning technique. A **high-oxygen fire** is characterized by its ability to spread fast, which causes it to be difficult more destructive, and harder to extinguish. Typically, **high-oxygen fires** will result in dry dusty soot. The cleaning regimen is below.

Clean-up Recommendations and Guidelines:

- Wear gloves such as household dish washing gloves, long-sleeved shirts, and pants to avoid skin contact. If you get any ash on your skin, wash it off as soon as possible.
- Wear personal protective gear, such as a dust mask (preferably an N95 mask), to avoid breathing in ash and other airborne particles.
- Ventilate the area (open windows, etc.) to remove soot and odor.
- Remove burned debris to reduce odors.
- Install dehumidifiers to control moisture in the air (relative humidity), especially where water was used to extinguish the fire.
- Quickly evaluate contents in order of value, to determine if they need to be cleaned or removed.
- To remove soot and smoke from walls, furniture and floors, use a mild soap or detergent or mix **4 to 6 tbsp.** of tri-sodium phosphate with **1 cup** household cleaner or chlorine bleach to every **gallon** of warm water. Wear rubber gloves. Be sure to rinse surfaces with clear warm water and dry thoroughly.
- Wash walls one small area at a time, starting from the floor up to prevent streaking. Immediately, rinse with clear water.
- Wash ceilings last.
- To reduce the chances of mold and mildew growth, wipe down all surfaces that were wet with a solution of **1 cup** of liquid household bleach to a **gallon** of water. **1st Perform a test on a small area with the bleach solution to make sure there will be no discoloration; to perform test, wipe with solution and let dry for 24 hours.**
- Do not repaint walls and ceilings until both are completely dry.
- Washable wallpaper can be cleaned like painted walls, but do not wet through the paper. Use a commercial paste to re-paste any loose edges or sections.
- Wipe all metallic finishes with cooking oil to prevent rust and staining.
- To remove heat discoloration on stainless steel, dip a soft cloth in vinegar and scrub the surface of the

stainless steel. Scrub the surface until there are no more streaks to be seen.

- Clean plastic or surfaces such as PVC windows and white painted surfaces using a mild detergent to remove possible acidic soot which may activate with moisture in the air and cause permanent staining.
- Pots, pans, flatware, etc., should be washed with soapy water, rinsed, and then polished.
- Stuff purses and shoes with newspapers to keep the shape. Leave suitcases open.
- Products containing fragrances should not be used to clean, as they mask odors.
- Where surface staining cannot be removed, consider the use of specialized paint (with anti-bleed characteristics) to eliminate the stain. Typically, these paints are **lacquers** or **oil based**.

Cleaning Techniques for Specific Types of Damage

For Damage Due to High-Oxygen Fires: Use dry chemical sponges that are meant to remove initial deposits and use a mild detergent.

For Damage Due to Kitchen Fires: Thorough cleaning is required, as residue may not be readily visible. Remember that usually kitchen cabinets and drawer contents will need to be removed to allow access to hidden areas.

Cleaning of Heavy Residue: This may require assistance from professionals and mechanical cleaning. Cleaning methods include the following:

- Low-pressure sandblasting
- Sodium bicarbonate blasting
- Dry ice blasting
- Power washing with steam
- Chemical application and agitation
- Non-destructive rubber blasting

Cleaning Techniques for Specific Materials

Curtains and Upholstery: Soot is oil and should be removed as much as possible with a powerful vacuum. On sooty fabrics, do not use an upright vacuum or any machine or attachment with brushes or beater bars, as it will force soot into your other possessions and make them much more difficult to clean. Hold the vacuum nozzle slightly above the surface and let the vacuum do the work in lifting soot from the surface. **Immediately** after cleaning cover possessions with clean sheets to prevent re-soiling during your other clean-up efforts. Do not machine wash drapes or other materials that require dry cleaning.

Carpet: Use a rotary scrubber or an extraction machine from a rental outlet or supermarket or hire a professional carpet cleaner.

Clothes and Bedding: Smoke odors can remain in fabrics for a very long time until all the unburned chemicals have been removed. Many of them are invisible to the eye. Soak overnight with detergent and wash normally. For items that can be bleached, add laundry bleach as normal during the wash cycle.

Hard Materials – Porous (painted surfaces, wallboard, plaster, wallpaper, exposed wood):

If soot is present on porous surfaces, we recommend the use of a dry chemical sponge to remove as much soot as possible. This step can prevent soot from being transferred deep into the surface where it may show as a permanent stain.

Hard Materials – Less Porous (tile, countertops, sealed wood, glass, metal, appliances, and vinyl wallpaper):

Use a sponge, towel, or mop with household cleaning detergent.

Cleaning Tips for Playground Equipment

Playground equipment can be cleaned by following the cleaning techniques mentioned above. However, for sandboxes, thorough cleaning is **not** effective to remove ash and soot. Replace sand with new sand to ensure safety and cleanliness.

Safety Tips During Restoration

- Do not use electrical appliances that have been near a fire.
- Do not use ceiling fixtures if the ceiling is wet.
- Do not touch anything during your first inspection to prevent transferring soot from item to item.
- If needed, seek professional help in restoration effort.

For more information, contact the **Environmental Health Division** at **(888) 700-9995** or email ehmail@ph.lacounty.gov.